

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**SEDIMENT BASIN**

(No.)  
**CODE 350**

**DEFINITION**

A basin constructed to collect and store debris or sediment.

**PURPOSE**

To preserve the capacity of reservoirs, ditches, canals, diversion, waterways, and streams; to prevent undesirable deposition on bottom lands and developed areas; to trap sediment originating from construction sites; and to reduce or abate pollution by providing basins for deposition and storage of silt, sand, gravel, stone, agricultural wastes, and other detritus.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies where physical conditions or land ownership preclude treatment of a sediment source by the installation of erosion-control measures to keep soil and other material in place or where a sediment basin offers the most practical solution to the problem.

**CRITERIA**

Sediment yield shall be computed, and the sediment basin sized, using one or more of the following references:

- National Engineering Handbook, Section 3, Sedimentation,
- Engineering Field Manual, Chapter 10, Gully Treatment,
- Engineering Field Manual, Chapter 15, Irrigation,
- New Mexico Agronomy Technical Note No. 28, Water Erosion - RUSLE
- Actual field studies in the field office area,
- Other approved NRCS references.

The capacity of the sediment basin shall equal the volume of sediment expected to be trapped at the site during the planned useful life of the basin or the improvements it is designed to protect. If periodic removal of sediment is expected, the capacity may be proportionately reduced.

Sediment basins controlling sediment from irrigated cropland shall be designed to store at least one year's accumulation of sediment from the contributing area. Provisions must be included in the operation and maintenance plan for periodic removal of the sediment.

Sediment basins controlling sediment from non-irrigated land shall have a useful design life of at least 10 years.

The design of dams, spillways, and drainage facilities shall be according to NRCS standards for ponds (378) and grade stabilization structures (410) or according to the requirements in TR-60, as appropriate for the class and kind of structure being considered.

Temporary basins having drainage areas of 5 acres or less and a total embankment height of 5 ft or less may be designed with less conservative criteria if conditions warrant.

The embankment shall have a minimum top width of 4 ft and side slopes of 2:1 or flatter. An outlet shall be provided of earth, pipe, stone, or other devices adequate to keep the sediment in the trap and to handle the 10-year-frequency discharge without failure or significant erosion.

Adequate structures shall be included in the sediment basin design to safely control the water inlet and/or outlet of the sediment basin.

Provisions shall be made for draining sediment pools if necessary for safety and vector control. Fencing and other safety measures

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| Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resource Conservation Service. |
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shall be installed as necessary to protect the public from floodwater and soft sediment. Due consideration shall be given to good visual resource management.

from adverse impacts such as rodent holes, vehicular traffic, seepage, erosion, mosquitoes, woody vegetation, or sediment accumulation.

### **CONSIDERATIONS**

Effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and groundwater recharge.

Effects on downstream flows and aquifers that would affect other water uses and users.

Effects on volume of discharge flow on the environmental, social, and economic conditions.

Effects on the water table downstream and the results of changes of vegetative growth.

Effects on erosion, movement of sediment, pathogens, and soluble and sediment-attached substances that could be carried by runoff.

Effects on the visual quality of onsite and downstream water resources.

Effects of construction and early establishment of protective vegetation on the surface and ground water.

Effects on wetlands and water-related wildlife habitats.

### **PLANS AND SPECIFICATIONS**

Plans and specifications for installing sediment basins shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

### **OPERATION AND MAINTENANCE**

Provisions shall be made as necessary for operations and maintenance requirements and may include a formal plan for larger or more complex designs.

The following actions shall be carried out to ensure the practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), repair, and upkeep.

The basin and all of its components will be inspected periodically, protected, and restored as needed to maintain the intended purpose